## React.js Basics: Exploring Core Concepts - 100 points possible

**Objective**: To learn the fundamental building blocks of React.js and its component-based architecture, and to develop the practical skill of effectively using online documentation.

**Instructions**: Answer the questions below in your own words, using the links provided as a starting point. **Please do some reading and try to learn something, don't just speed through it.** You may need to access other sources than the supplied links to answer the questions provided.

Create a **reactJS** folder in your root directory. Download this document (File>Download Choose doc type). Fill out the questions below and commit it to the **reactJS** folder.

**Questions**:

1. Understanding React.js:

What is React.js, and what is its primary purpose in web development?

It is a component-based JS library. It is used to make dynamic and interactive UI.

[React Official Website](https://react.dev/)

<https://www.geeksforgeeks.org/reactjs/reactjs-introduction/>

1. Components in React:

Compare Functional Components with Class Components. Why are Functional Components preferred in modern React?

Easier to read, test, and maintain.

[React Official Documentation: Components and Props](https://react.dev/learn/your-first-component)

[React Official Documentation: State: A Component's Memory](https://react.dev/learn/state-a-components-memory)

https://www.freecodecamp.org/news/function-component-vs-class-component-in-react/

1. JSX (JavaScript XML):

What is JSX in React? It is a syntax extension for JS.

Why is it used? Lets you write HTML inside of a JS file.

[React Official Documentation: Writing Markup with JSX](https://react.dev/learn/writing-markup-with-jsx)

1. Props (Properties):

What are "props" in React components? Information to pass to a JSX tag.

How are props passed from a parent component to a child component? Giving them props.

Are props mutable (can they be changed by the child component)? Yes they can.

[React Official Documentation: Components and Props](https://react.dev/learn/passing-props-to-a-component)

1. State:

What is "state" in a React component? An object that holds info about a components current statis.

How do Functional Components manage state? It re-renders the component to show the new data.

How do you update the state of a component? Take the last state and props of the component as paramaters and renew the counter.

Why shouldn't you directly modify the state? Because they are not directly modified.

[React Official Documentation: State: A Component's Memory](https://react.dev/learn/managing-state)

https://www.geeksforgeeks.org/reactjs/reactjs-state/

1. React Hooks:

Explain the purpose of the useState hook. They make components more stronger by allowing them to handle and manage side effects.

What is the useEffect hook used for? Allows you to perform effects on the side in components.

<https://www.geeksforgeeks.org/reactjs/difference-between-usestate-and-useeffect-hook-in-reactjs/>

1. The Virtual DOM:

What is the Virtual DOM in React? An representation of DOM.

How does it contribute to React's performance? It applies only the necessities so that rendering performance is optimized.

<https://www.geeksforgeeks.org/reactjs/reactjs-virtual-dom/>

[freecodecamp - Virtual DOM](https://www.freecodecamp.org/news/what-is-the-virtual-dom-in-react/)

1. Event Handling:

How do you handle events (like button clicks) in React components? You can give event handler props any name that you like.

How does event handling in React differ from traditional HTML event handling? React behaves like a snapshot because it doesn’t change the state variable.

[React Official Documentation: Adding Interactivity](https://react.dev/learn/adding-interactivity)